



COLORADO SPRINGS,  
COLORADO

AUGUST 1990



PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.

P.O. Box 16521  
Colorado Springs, CO 80935

FIRST CLASS MAIL



# Ø BEAT



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Floyd Bryant KB5FCN 4160 Douglas Drive 80840	472-1959

\* denotes the first year of a two-year term.

**ZERO BEAT** is published monthly in the interest of the members of the Pike's Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. Cost is \$04 per month for non-members or a \$6.00 per year subscription. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pike's Peak Radio Amateur Association meets on the second Wednesday of each month at 7:00 p.m. All amateurs and interested parties are invited to attend.

EDITOR: Ron Deutsch NKØP 4305 Ridgeline Drive Colorado Springs, Co. 80918 (719) 593-8352 or 145.01 (Packet)

## MESSAGE FROM THE PRESIDENT

Another month has come and gone. Club and amateur activity is running at a high level this weekend with both the Colorado State Games and the Pike's Peak Hill Climb going on at the same time. Its nice to see a spirit of cooperation between hams from both Colorado Springs and Denver in providing communications support for these events but it would have been nice if more people from our club had volunteered to work these club sponsored

Perhaps I always look at the wrong side of club activities but it seems to me that the same people can always be counted on to be involved in club activities, whether it is a picnic, a swapfest or whatever. I bring this up because club elections are coming up in October of this year. I'm not sure if any of the current officers are going to run for re-election. One reason cited in other activities (read that one as work) make it difficult to volunteer for extra responsibilities. But the one I hear most often is that people are just plain burned out.

In the past two years I have watched the club grow to over 200 members, many of them either new to the area or new hams altogether. Over the next couple of months you, as club members, must decide not only where you want the club to go in the coming year but who you think should lead the club, making decisions on what will be done and when. I urge you to give this some serious thought now. Seek out those people you think would do a good job as club officers and convince them to accept your nomination. Don't wait until we sit down in October at the club meeting to

give it any thought. That may be too late to get the officers you need for the coming year. Enough said.

On July 25th, the antenna ordinance committee met with county officials again. As I understand it as we go to press, they agreed to remove the half mile limit between towers. Look through the rest of this issue to see what else is going on with this topic. That's all I can think of to write about this month so I'll end it here.

73's Rick WB7THT

## NEW Ø-BEAT EDITOR NEEDED

I plan to resign as Ø-Beat editor effective as soon as a replacement comes forward. It has been a learning experience for me. I learned how to use a desktop publisher, how to cut and paste together a newsletter, how to deal with a printshop, etc, etc. It was a great learning experience.

If there is a downside to the job it is time. It takes an average of 8 hours to put the issue together, and, about 2-3 more hours to fold, stamp, and staple 300 copies. The job has many rewards and many volunteers have been helping me out. Special thanks to NØCMW and WB7THT. And, of course all of you who have contributed articles!

If you are interested give me a call and I can show you what is involved. You do not need a computer to do this! It can be done just as well on a typewriter. But, it will take more time to do that way.

73s, Ron, NKØP  
Ø-BEAT editor

## "THE VIEW FROM THE PEAK"

by George Hinds, N8CIX

During 5500 miles of "mobiling" in May, from time to time thoughts did occur and questions arise about things that you, too, may have wondered about on occasion.

Did you ever wonder why a ham who loves to talk buys a stick-shift car? Me, too. The conversation is flowing, then a long silence. What happened? Involved in an accident? Radio go kaput? His transmitter blank out his radar detector and those flashing red lights in his rear view mirror cause him to have palpitations of the heart and a seizure of the voice box? No, none of the above. Finally he comes in and says, "Sorry about that — just had to do some serious shifting." Well, it is understandably difficult to talk into a microphone that's being held at knee level and still survive on Academy.

Did you ever wonder what happened to good conversation? What's more boring than listening on a good, wide-area repeating machine being used by a couple of ginks whose sole topic of conversation is their mobile antenna. As a rule, who cares? No wonder so many wives don't want the OM to have the rig on in the car. Or so few youngsters after listening to such twaddle on their dad's rig are captivated by ham radio?

If you're like me, you want to know something about the person to whom you're talking. His work, where he is from, what is he doing here (vacation, work, or passing through), where does his major interest lie in ham radio, what are his hobbies, and so on. But not whether he's running a quarter-wave or a five-eighths antenna...

Did you ever dial up a repeater and have the bad luck to snag the local "whiner"? Whining about the county, the state, the taxes, the neighbors, too many of this, too little of that, can't leave soon enough, etc., etc. Whiners must gain satisfaction from trying to make the world appear as bad a place for others as it is for themselves. Well, that's what the "off" switch is for. Thank heavens this type is rare; otherwise we'd "deep-six" the 2-meter rig and switch to a cellular phone.

Did you ever wonder why people who live in Florida brag about it? When you bump into them on the radio, they even seem proud to claim that place as their home. I've been there several times; I usually skip out as soon as possible. I can't understand why anyone would lay claim to the place. The land of bugs, snakes, lizards, alligators and other assorted types of creepy, crawly things.

I think most Floridians spend their time in air-conditioned cars and homes. Or else going from one to the other. Either way, a lot of their time is spent inside away from the weather. Most of all, by questioning me about "Don't I think Florida is wonderful," I feel they want to be reassured they made the right move when they left Iowa or Kansas (or somewhere) and settled in Florida. Hardly anybody is a native of that place.

Did you ever wonder why the number of hams mobiling cross-country heard on repeaters is decreasing year by year. It's not due to a lack of repeaters. It may be partly due to a decrease in hams. I think I know the real reason: the soaring costs of motels. If he's young with a growing family, what ham can afford many nights in \$30-\$40 motels and hotels? If he's retired and scraping by on a pension, the same problem exists. What this country and we hams need is clean \$20-\$25 a night motels without pools, saunas, exercise room, etc. Who uses them, anyway? Did you ever wonder about the ham who calls in on a repeater and announces he is "monitoring"? Then, by the time you've moved over to the rig, picked up the microphone and answered, there's no reply? His "monitoring" only lasted for a few seconds, you've been taken away from something else you were doing, etc. This bird is one of my favorites!

It's time to get on with bigger and better things!

N8CIX/0

## Volunteers thanked for aid

Special thanks to all those volunteers who helped Disaster Services in its coordination efforts for relief to the families affected by the June 6 tornado in the Rush/Yoder area.

A very special thanks to all the amateur radio "hams" who assisted this office to coordinate welfare traffic to and from Limon and added valuable weather information to fine-tune local area forecasts. You continue to be a prized community asset.

— Frank J. Luciani  
Manager  
Disaster Services  
El Paso County

# Why Are the Radio Amateurs Called "HAM S"?

Have you ever wondered why radio amateurs are called "Hams"? Well, it goes like this:

The word "HAM" was the station Call Sign of the first amateur wireless stations operated by three members of the Harvard Radio Club, in 1908. They were Albert S. Hyman, Bob Almy and P. Murray. At first they called their station "Hyman-Almy-Murray". Tapping out such a long name in code soon became tiresome, and called for a revision. They changed it to "Hy-Al-Mu", using the first two letters of each of their names.

Early in 1909 some confusion resulted between signals from amateur wireless station "HYALMU" and a Mexican ship named "Hyalmo". They then decided to use only the first letter of each name and the station Call Sign became "HAM".

In the early pioneer days on unregulated radio amateur operators picked their own frequency and call-letters. Then, as now, some amateurs had better signals than commercial stations. The resulting interference came to the attention of Congressional Committees in Washington D.C., and Congress gave much time to proposed legislation designed to critically limit amateur radio activity.

In 1911, Albert Hyman chose the controversial Wireless Regulation Bill as the topic for his Thesis at Harvard. His instructor insisted that a copy be sent to Senator David I. Walsh, a member of one of the committees hearing the Bill. The Senator was built and almost cried when he told to close down the station because they could not afford the license fees and all the other requirements which the Bill imposed on amateur stations.

Congressional debate began on the Wireless Regulation Bill and little station "HAM" became the symbol for all the little amateur stations in the country crying to be saved from the menace and greed of the big commercial stations who didn't want them around. The Bill finally got to the floor of Congress and every speaker talked about the "...poor little station HAM".

That's how it all started. You will find the whole story in the Congressional Record. Nationwide publicity associated station "HAM" with amateur radio operators. From that day to this, and probably until the end of the time in radio; an amateur is a "HAM".

*This information was published in 1959 by Florida Skip, The All-Florida Amateur Radio Publication, P.O. Box 501, Miami Springs, FL 33266. Editor/Publisher: Andy Clark, W4LYT.*

## SATELLITE ELEMENT SETS

Here are up to date element sets for amateur

**Name:** MIR, ID: 16609, Epoch: 90207.55431736, Incl: 51.6117, RAAN: 131.9505, Eoce: .0010123, ARGP: 184.9190, Me An: 175.1704, M Mot: 15.63382422, Drag: .00023684, Orbit: 254257.

**Name:** OSCAR 13, ID: 19216, Epoch: 90203.06565255, Incl: 56.9731, RAAN: 144.6059, Eoce: .6995680, ARGP: 231.8969, MEAN: 42.0915, M MOT: 2.09697095, DRAG: .000099999, ORBIT: 16131.

**NAME:** OSCAR 14, ID: 20437, EPOCH: 90207.18619130, INCL: 98.6956, RAAN: 283.1795, Eoce: .0011403, ARGP: 45.2973, MEAN: 314.9204, M MOT: 14.28663281, DRAG: .00014091, ORBIT: 26438.

**NAME:** OSCAR 15, ID: 20438, EPOCH: 90207.84758274, INCL: 98.6996, RAAN: 283.8163, Eoce: .0011167, ARGP: 41.4669, MEAN: 318.7356, M MOT: 14.28396846, DRAG: .000022919, ORBIT: 26522.

**NAME:** OSCAR 16, ID: 20439, EPOCH: 90208.01351185, INCL: 98.7026, RAAN: 284.1286, Eoce: .0012465, ARGP: 42.7692, MEAN: 317.4460, M MOT: 14.28766956, DRAG: .000087147, ORBIT: 26558.

**NAME:** OSCAR 17, ID: 20440, EPOCH: 90208.00829268, INCL: 98.7025, RAAN: 284.1351, Eoce: .0012544, ARGP: 43.3845, MEAN: 316.8325, M MOT: 14.28814388, DRAG: .000090136, ORBIT: 26553.

**NAME:** OSCAR 18, ID: 20441, EPOCH: 90207.99474989, INCL: 98.7022, RAAN: 284.1462, Eoce: .0013057, ARGP: 44.2068, MEAN: 316.0199, M MOT: 14.28908221, DRAG: .000011781, ORBIT: 26558.

**NAME:** OSCAR 19, ID: 20442, EPOCH: 90207.98585070, INCL: 98.7023, RAAN: 284.1576, Eoce: .0013369, ARGP: 44.4843, MEAN: 315.7419, M MOT: 14.28977979, DRAG: .000056245, ORBIT: 26556.

**NAME:** RS 10/RS11, ID: 18129, EPOCH: 90207.90978030, INCL: 82.9287, RAAN: 299.1809, Eoce: .0012070, ARGP: 16.5218, MEAN: 343.6343, M MOT: 13.72099536, DRAG: .000032325, ORBIT: 154898.

*73's...Rick, WB7THT*

1934 Official

## SHORT WAVE RADIO MANUAL

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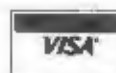


330014 - Shortwave Radio Manual ..... 15.45

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Evening Hours: 7:15 - 9:30 by  
appointment only

Phone is off-hook 6:00 - 7:15 PM.



# Frequency Allocation Chart

## US AMATEUR BANDS

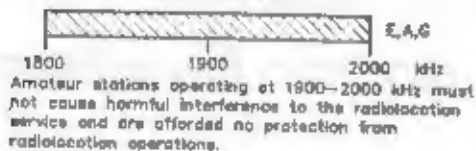
Revised November 15, 1989

### US AMATEUR POWER LIMITS

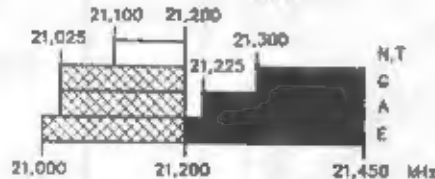
At all times, transmitter power should be kept down to that necessary to carry out the desired communications. Power is rated in watts PEP output. Unless otherwise stated, the maximum power output is 1500 W. Power for all license classes is limited to 200 W in the 10,100-10,150 kHz band and in all Novice subbands below 28,100 kHz. Novices and Technicians are restricted to 200 W in the 28,100-28,500 kHz subband in addition, Novices are restricted to 25 W in the 222.1-223.91 MHz subband and 5 W in the 1270-1295 MHz subband.

Operators with Technician class licenses and above may operate on all bands above 50 MHz. For more detailed information see The FCC Rule Book.

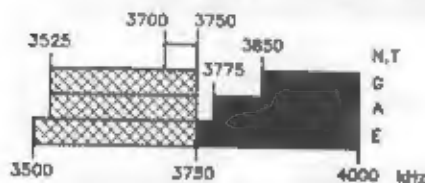
### 160 METERS



### 15 METERS



### 80 METERS

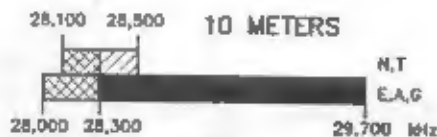


5187.5 kHz (SSB only): Alaska emergency use only.

### 12 METERS

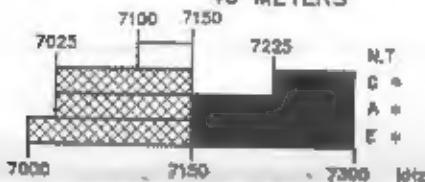


### 10 METERS



Novices and Technicians are limited to 200 watts PEP output on 10 meters.

### 40 METERS



\* Phone operation is allowed on 7075-7100 kHz in Puerto Rico, US Virgin Islands and areas of the Caribbean south of 20 degrees north latitude; and in Hawaii and areas near ITU Region 3, including Alaska.

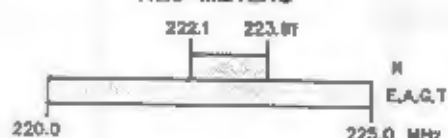
### 6 METERS



### 2 METERS



### 1.25 METERS



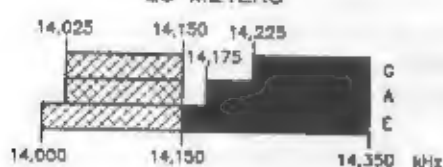
Novices are limited to 25 watts PEP output from 222.1 to 223.91 MHz.

### 30 METERS

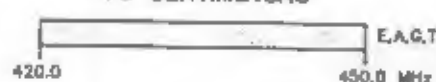


Maximum power on 30 meters is 200 watts PEP output. Amateurs must avoid interference to the fixed service outside the US.

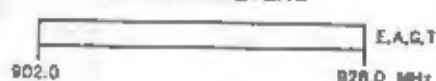
### 20 METERS



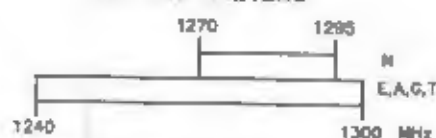
### 70 CENTIMETERS



### 33 CENTIMETERS



### 23 CENTIMETERS



Novices are limited to 5 watts PEP output from 1270 to 1295 MHz.

### KEY

- = CW, RTTY and data
- = CW, RTTY, data, MCW, phone and image
- = CW, phone and image
- = CW and SSB
- = CW, RTTY, data, phone, and image
- = CW only

E = AMATEUR EXTRA  
A = ADVANCED  
G = GENERAL  
T = TECHNICIAN  
N = NOVICE



# MAJOR ARRL OPERATING EVENTS AND CONVENTIONS—1990\*

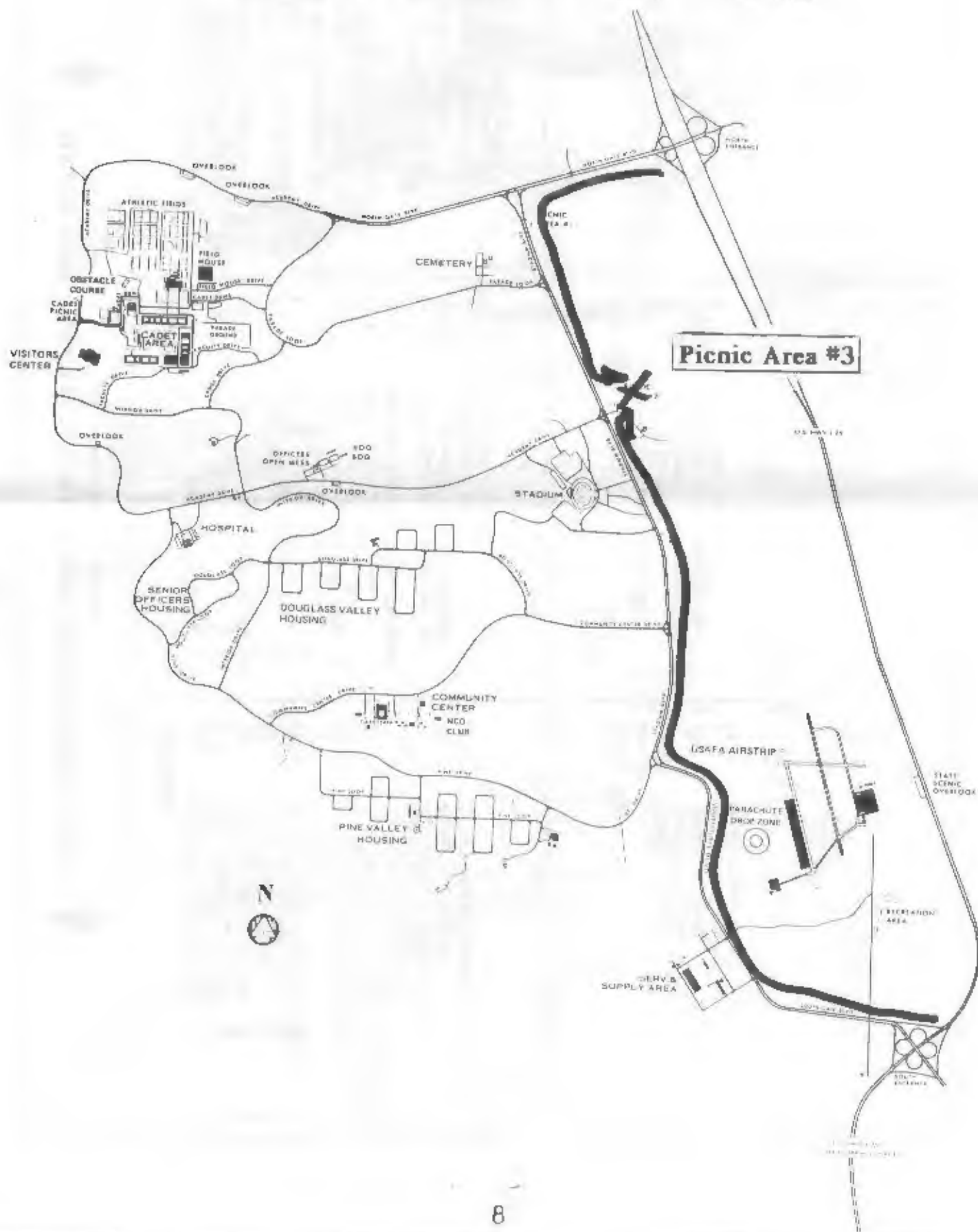
(Check QST monthly for updates)

<p><b>JULY</b></p> <p>1 ARRL Hamfest (Wilkes-Barre, PA)</p> <p>4 West Coast Qualifying Run</p> <p>7 ARRL Hamfest (West Des Moines, IA)</p> <p>7-8 Central Division Convention (Indianapolis, IN)</p> <p>7-8 Southeastern Division Convention (Atlanta, GA)</p> <p>8 ARRL Hamfest (Alexander, NY)</p> <p>8 ARRL Hamfest (Downers Grove, IL)</p> <p>10 W1AW Qualifying Run (35-10 WPM)</p> <p>14-15 IARU HF World Championship</p> <p>21 ARRL Hamfest (Union, ME)</p> <p>22 ARRL Hamfest (Van Wert, OH)</p> <p>27-29 ARRL Hamfest (Flagstaff, AZ)</p> <p>28 W1AW Qualifying Run</p> <p>28 ARRL Hamfest (Texas City, TX)</p> <p>29 ARRL Hamfest (Peotone, IL)</p> <p>31 West Coast Qualifying Run</p>	<p><b>AUGUST</b></p> <p>3-5 West Gulf Division Convention (Austin, TX)</p> <p>4-5 UHF Contest</p> <p>4-5 Florida State Convention (Jacksonville, FL)</p> <p>5 ARRL Hamfest (Berryville, VA)</p> <p>8 W1AW Qualifying Run</p> <p>11 ARRL Hamfest (Bend, OR)</p> <p>11 ARRL Hamfest (Springfield, MO)</p> <p>18 ARRL Hamfest (Victoria, TX)</p> <p>18-19 10-GHz Cumulative Contest</p> <p>18-19 Alabama State Convention (Huntsville, AL)</p> <p>18-19 ARRL Hamfest (Cedar Rapids, IA)</p> <p>23-26 Southwestern Division Convention (San Diego, CA)</p> <p>28 W1AW Qualifying Run</p>	<p><b>SEPTEMBER</b></p> <p>5 West Coast Qualifying Run</p> <p>8-10 September VHF QSO Party</p> <p>9 ARRL Hamfest (Joliet, IL)</p> <p>9 ARRL Hamfest (Butler, PA)</p> <p>13 W1AW Qualifying Run</p> <p>15-16 10-GHz Cumulative Contest</p> <p>15-16 Roanoke Division Convention (Virginia Beach, VA)</p> <p>15-16 Illinois State Convention (Peoria, IL)</p> <p>22 Michigan State Convention (Gaylord, MI)</p> <p>22 Joint ARRL/CRRL Computer Networking Conference (London, ON)</p> <p>22-23 ARRL Hamfest (York, PA)</p> <p>23 ARRL Hamfest (Cleveland, OH)</p> <p>28 W1AW Qualifying Run</p> <p>29-30 ARRL Hamfest (Louisville, KY)</p>
<p><b>OCTOBER</b></p> <p>2 West Coast Qualifying Run (10-40 WPM)</p> <p>12 W1AW Qualifying Run (10-40 WPM)</p> <p>13-14 ARRL Hamfest (Memphis, TN)</p> <p>14 ARRL Hamfest (Maysville, NC)</p> <p>21 ARRL Hamfest (Centerville, IL)</p> <p>28 W1AW Qualifying Run</p> <p>31 West Coast Qualifying Run</p>	<p><b>NOVEMBER</b></p> <p>3-5 November Sweepstakes, CW</p> <p>10 W1AW Qualifying Run</p> <p>10 ARRL Hamfest (West Monroe, LA)</p> <p>17-19 November Sweepstakes, phone</p> <p>27 W1AW Qualifying Run</p>	<p><b>DECEMBER</b></p> <p>Nov 30- 160-Meter Contest</p> <p>Dec 2 West Coast Qualifying Run</p> <p>4 10-Meter Contest</p> <p>8-9 W1AW Qualifying Run</p> <p>9 W1AW Qualifying Run</p> <p>27 W1AW Qualifying Run</p>

# PPRAA PICNIC AUGUST 5TH

## 1030 TO 1500

### PRIZES, MINISWAP, FOOD





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JAMES STEELE  
12820 Evans  
Elbert, Co. 80106

## PPRAA JULY MEETING

### GENERAL MEETING JULY 11, 1990

Meeting was called to order at 1900 local by President Rick, WB7THT by everyone introducing themselves.

Minutes were approved as printed in 0BEAT.

#### Treasurer report:

Previous \$3486.45  
Income \$115.00  
Expenses \$671.99  
Balance \$2929.46.

#### COMMITTEE REPORTS:

RFI: JEFF, N0JLH 591-6438 Nil

EDUCATION: BUD, N0DDF 475-0537 New classes September or October

D&B SCHOOL: BUD, N0AA 689-2963 School on vacation.

PUBLIC SERVICE: MIKE, K0TER 636-1290 State Games: 27, 28, 29 JULY.

Tripoli Rocket Launch August 17, 18, 19.

Doug, W2TGO is now severe weather net manager.

August 5th Walk on Academey.

LEE, WB0BLV Will check out flood staff gauges.

JACK HAGAR and ASSC. gave a pep talk on needing volunteers for the Pikea Peak Hill Climb, JULY 29th.

V.E. TESTING: MAX, KD0EL 488-9289 Next session September 8th at Chapman College, PRE REGISTRATION REQUIRED. Next after that December 8th.

0BEAT: RON, NK0P 593-8352, Need someone to put out September 0BEAT (NOTE: Our illustrious President volunteered to do so)

PICNIC: HARV, WB6YXD Need everyone to sign-up, will have mini swapfest and a raffle.

#### NEW BUSINESS:

TOWER ORDINANCE: Lauren, KX00, gave us a talk on it. EVERYONE SHOULD TRY TO ATTEND WHEN IT SHOWS UP ON AGENDA; LISTEN AND WATCH FOR DATES. LAUREN WILL LET ALN0CMW AT C.W. ELECTRONICS KNOW WHAT IS GOING ON. MOST LIKELY AUG 21ST.

RICK, WB7THT, presented \$100.00 to the Elks Club for their scholarship fund from the club.

Max thanked all who made field day a success, and Jake thanked the Air Force Security for all their help.

A lengthy discussion was held on club trailer. It needs about \$200.00 worth of parts and lots of labor to put it back in running shape.

After Steve ? volunteered to head up a trailer committee the club voted to keep it and go ahead with repairs. Steve took down names of those who volunteered to help.

Broke for short break then raffle by N0ION:

N0CYR CHIMES,  
N0LUF SCREWDRIVERS,  
CHRIS BANKS GATEWAY CERTIFICATE,  
N0ION TIE WRAPS,  
N0IZQ CAVE OF THE WINDS PASS,  
N0HJT QSL CARDS,  
W0MCT WAX MUSEUM PASS,  
K0NC WORLD RADIO SUBSCRIPTION,  
WB6YXD PASS PRESIDENTS MUSEUM,  
N8CIX BOOK

Next board meeting at the QTH of AL N0CMW.

MEL, W3TMR, put on a talk and video of the Limon disaster. It was enjoyed by all.

MEETING adjourned 2130.

*Submitted by AL N0CMW Secretary PPRAA.*

## BOARD MEETING

July 16th Meeting called to order by president Rick, WB7THT, at 1900 present were RICK, WB7THT, RON NK0P, ROSIE W0MNL, DAVE N0ION, AL N0CMW.

The program for the August meeting is to be on search and rescue.

Club picnic on Aug 5th coming along fine. Rosie authorized to pay all bills pertaining to picnic.

Dave reported he had purchased an Astron 35 amp power supply for the raffle prize to be given away at the picnic from C.W. Electronics at a comparable price to mail order.

Board reauthorized the expenditure of \$200.00 for trailer repair.

The board will not recommend as last year a slate of candidates for election in October, but will take names of all who desire to run for an office.

NOTE: NO ONE WILL BE PUT ON BALLOT UNLESS THEY VOLUNTEER.

We do need a few good men and women to run this club next year, so let one of board members know your desires.

Next board meeting will be at the QTH of RICK WB7THT.

No further business meeting adjourned at 2030.

*submitted by AL N0CMW Secretary PPRAA.*

## CONGRATULATIONS...

**GEORGE BEAUCHAMP, WD0K;** George received DXCC #524 on 10 meters January 29, 1990.

**CONNIE STREAMER, KA0PXE;** Connie passed her Technician license on March 24, 1990.

**WILLIAM C. KESSLER** passed his Novice and Technician licenses.

## DITS AND BITS

**WANTED:** Ham radio call sign New Mexico license plates for collection, 1950's to present. Bill Johnson, NSKR, P.O. Box 370, White Sands, NM 88002. Phone 505-382-7804.

**FOR SALE:** Speaker Mic. for Sanyo Handheld-Model SM-3. New in Box \$15  
ICOM HM-12 Hand Mic. \$20  
Precision RF Signal Generator 100KC to 120MC working condition. \$25  
Ron, NK0P, 593-8352

**FOR SALE:** Butternut 6 Band vertical antenna. Partial trade for VHF antenna.  
John, N0KIC, 635-1604

## AUGUST PPRAA MEETING

The August meeting of the PPRAA will be held on August 8th at 7PM at the BLKS Lodge on North Nevada Ave. The topic will be "Search and Rescue".

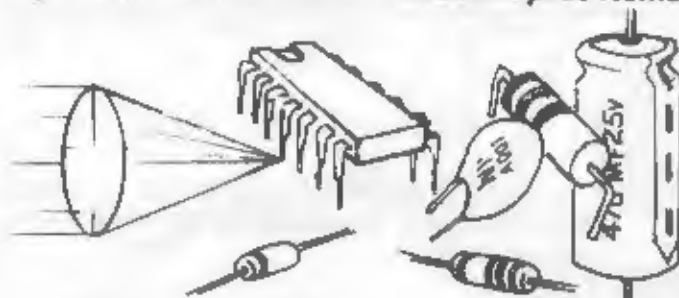
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WA0ADV

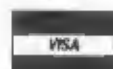
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KD0RW

AL  
N0CMW

DOUG  
W2CRS

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(303) 832-1111

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# COLORADO AMATEUR CONNECTION

## AMATEUR REPAIR SERVICE

**KA0WIN—KB0EDL**

**REPAIR: RADIOS, AMPLIFIERS, POWER  
SUPPLIES, AND OTHER RELATED AMATEUR  
EQUIPMENT.**

**637-1218**

**9AM TO 9PM**

**MONDAY THRU FRIDAY**

## **EL PASO COUNTY TOWER ORDINANCE UPDATE**

A committee consisting of representatives of the local Amateur Radio community, El Paso County, and local homeowners associations met on Wednesday, July 25th. Lauren Libby, KX0O reported good progress was made in removing some of the most objectionable language.

However, do not quit calling the county commissioners or Mr. Ken Roberg (520-6300). The battle has not been won...yet. The meetings have just been postponed until late August or September.

Watch for more information here or thru the local repeater system on 2mtr. We may need your support ~~at a moments notice~~

For more information contact KX0O or W0MXV.

*NK0P, G-Beat Editor*

## **Membership Application PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.**

P.O. Box 16521  
Colorado Springs, CO 80935

Date \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Call \_\_\_\_\_ License Class \_\_\_\_\_

Are You An ARRL Member? ☐ Yes ☐ No

▪ Member Over 65 \$10.00

▪ Family Both Over 65 \$12.00

▪ Associate Member \$10.00

Telephone \_\_\_\_\_

▪ Full Member \$15.00

▪ Family Membership \$18.00

▪ Newsletter Only \$10.00

Additional Names \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_

Associate Member

☐ (Outside Teller & El Paso Counties.)

PPRAA is not associated with the Pikes Peak FM Association.